United States Patent [19]

Lechtken et al.

[11] **4,324,744**

[45] **Apr. 13, 1982**

[54] ACYLPHOSPHINE OXIDE COMPOUNDS

[75] Inventors: **Peter Lechtken,** Frankenthal; **Ingolf Buethe,** Mannheim; **Anton Hesse,** Luetzelsachsen, all of Fed. Rep. of Germany

[73] Assignee: **BASF Aktiengesellschaft,** Fed. Rep. of Germany

[21] Appl. No.: **148,221**

[22] Filed: **May 9, 1980**

Related U.S. Application Data

[63] Continuation of Ser. No. 55,360, Jul. 6, 1979, abandoned.

[30] **Foreign Application Priority Data**

Jul. 14, 1978 [DE] Fed. Rep. of Germany 2830927

[51] **Int. Cl.**[3] **C07F 9/30;** C07F 9/38; C07F 9/53

[52] **U.S. Cl.** **260/932;** 260/941; 546/21; 549/6; 568/15

[58] **Field of Search** 546/21; 549/6; 260/941, 260/932; 568/15

[56] **References Cited**

U.S. PATENT DOCUMENTS

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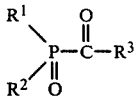
Primary Examiner—Alan L. Rotman

Attorney, Agent, or Firm—Keil & Witherspoon

[57] **ABSTRACT**

Acylphosphine oxide compounds of the general formula

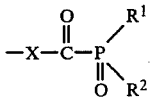


where

R^1 is alkyl, cyclohexyl, cyclopentyl, aryl which is unsubstituted or substituted by halogen, alkyl or alkoxy, or an S-containing or N-containing five-membered or six-membered heterocyclic radical,

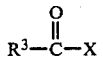
R^2 has one of the meanings of R^1 (but R^1 and R^2 may be identical or different), or is alkoxy, aryloxy or aralkoxy, or R^1 and R^2 together from a ring, and

R^3 is straight-chain or branched alkyl of 2 to 18 carbon atoms, a cycloaliphatic radical of 3 to 12 carbon atoms, phenyl or naphthyl which are alkyl-, alkoxy- or thioalkoxy-substituted, or an S-containing or N-containing five-membered or six-membered heterocyclic radical, and may contain additional functional groups, or is the group

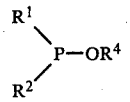


where R^1 and R^2 have the above meanings and X is phenyl or an aliphatic or cycloaliphatic divalent radical of 2 to 6 carbon atoms,

and one or more of the radicals R^1 to R^3 may be olefinically unsaturated, a process for the preparation of these acylphosphine oxide compounds from acid halides of the general formula



where X is chlorine or bromine, and a phosphine of the general formula



and the use of the acylphosphine oxides as photoinitiators in photopolymerizable compositions.

3 Claims, No Drawings